

## SENTIERI project: mortality study of residents in Italian polluted sites – IPS

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**Background and Aims:** Soil contamination occurs in approximately 250,000 sites in the European Environment Agency member countries. In Italy several thousands qualify for remediation and 57 are defined as “of national concern” on the basis of documented contamination. SENTIERI project, funded by the Ministry of Health, aims at describing the health status of population resident in Italian polluted sites – IPS.

**Methods:** Forty-four IPSs were selected for mortality analysis. IPSs were classified in terms of presence of environmental exposure as documented in Ministerial Decrees, namely: chemical industry/petrochemical plants&refineries/harbour area/asbestos or other mineral fibers/steel plants/thermoelectric power plants/mines or quarries/landfills/incinerators. In each IPS, for the period 1995-2002, for 63 causes of death, for both genders were calculated: i) Italy 2001 mortality rates (x 100,000) ii), standardised mortality ratios, crude and adjusted for deprivation, regional reference

**Results:** In 1995-2002 Italian mortality rate for all causes is 1340 (100,000/year) for males and 828 for females. The rate is higher than the regional one respectively in 27 IPSs for males and 24 for females. For all tumors the national rate is 410 for males and 210 for females, the rate is higher than the regional one in 28 IPSs for males and 21 IPSs for females. Adjusting for deprivation, in all IPSs combined, around 10,000 and 4,000 excess deaths over the regional expected values are observed respectively for all causes and for all tumors.

**Conclusions:** The study shows that Italian IPSs contribute substantially to the environmental burden of disease confirming findings from previous investigations. Health impacts are heterogeneous, and several questions arise in the interpretation, for example regarding mixtures of exposures, residual confounding, occupational vs environmental effects. However, findings do provide an overall picture of the health profile of residents, and indications on priority action on mitigation and remediation of contaminated sites.

**References:** Pirastu R, Ancona C, Iavarone I, Mitis F, Zona A, Comba P. SENTIERI Project - Mortality study of residents in Italian polluted sites: evaluation of the epidemiological evidence. *Epidemiol Prev.* 2010; 5-6 (Suppl 3):1-96.